

**CLAIMS**

1. A method of adjusting a communication receiver, the method comprising:
  - determining a velocity of a wireless communication device in relation to a wireless network infrastructure; and
  - determining one or more adjustments to the operation of the communication receiver based on the determined velocity of the wireless communication device.
2. A method as defined in Claim 1, wherein determining the velocity of the wireless communication device and determining adjustments to the communication receiver are performed in the wireless communication device.
3. A method as defined in Claim 1, wherein determining the velocity of the wireless communication device and determining adjustments to the communication receiver are performed in the wireless network infrastructure.
4. A method as defined in Claim 1, wherein determining the velocity of the wireless communication device is performed in the wireless communication device, and determining adjustments to the communication receiver are performed in the wireless network infrastructure.
5. A method as defined in Claim 1, wherein determining the velocity of the wireless communication device is performed in the wireless network infrastructure, and determining adjustments to a communication receiver are performed in the wireless communication device.
6. A method as defined in Claim 1, further comprising estimating a frequency shift based on the velocity of the wireless communication device.
7. A method as defined in Claim 6, wherein estimating the frequency shift is performed in the wireless communication device.

8. A method as defined in Claim 6 wherein estimating the frequency shift is performed in the wireless network infrastructure.

9. A method as defined in Claim 1, further comprising adjusting the communication receiver in accordance with the determined adjustments.

10. A method as defined in Claim 9, wherein adjusting the communication receiver is performed in the wireless communication device.

11. A method as defined in Claim 9, wherein adjusting the communication receiver is performed in the wireless network infrastructure.

12. A method as defined in Claim 1, wherein the determined adjustments to the communication receiver further comprises adjustments to a frequency tracking loop.

13. A method as defined in Claim 12, wherein adjusting the frequency tracking loop further comprises estimating an initial frequency error for the tracking loop based on the velocity of the wireless communication device.

14. A method as defined in Claim 12, wherein adjusting the frequency tracking loop further includes estimating a frequency error for the tracking loop based on the velocity of the wireless communication device.

15. A method as defined in Claim 1, wherein the determined adjustments to the communication receiver further comprises adjustments to a time tracking loop.

16. A method as defined in Claim 15, wherein adjusting the time tracking loop further comprises estimating a loop filter coefficient for the tracking loop based on the velocity of the wireless communication device.

17. A method as defined in Claim 15, wherein adjusting the time tracking loop further includes estimating a drift in the timing of a received signal based on the velocity of the wireless communication device.

18. A method as defined in Claim 1, wherein determining the velocity further comprises receiving velocity information from a global positioning system receiver.

19. A method as defined in Claim 1, wherein determining the velocity further comprises receiving at least two location measurements of the wireless communication device, wherein the measurements are made at different, known, times, and determining the velocity of the wireless communication device is based on the at least two location measurements and their respective measurement times.

20. A method as defined in Claim 1, wherein the wireless network infrastructure further comprises a base station.

21. A method of adjusting a communication receiver, the method comprising:

determining one or more adjustments to operation of the communication receiver based on a velocity of a wireless communication device in relation to a wireless network infrastructure; and

adjusting the communication receiver in accordance with the determined adjustments.

22. A method as defined in Claim 21, wherein the velocity of the wireless communication device is determined in the wireless communication device.

23. A method as defined in Claim 21, wherein the velocity of the wireless communication device is determined in the wireless network infrastructure.

24. A method as defined in Claim 21, further comprising determining the velocity of the wireless communication device based on velocity information received from a global positioning system receiver.

25. A method as defined in Claim 21, further comprising determining the velocity of the wireless communication device based on at least two location measurements of the wireless communication device, wherein the measurements are made at different, known, times, and determining the velocity of the wireless communication device is based on the at least two location measurements and their respective measurement times.

26. A method as defined in Claim 21, further comprising estimating a frequency shift of a communication signal transmitted between the wireless network infrastructure and the wireless communication device based on the velocity of the wireless communication device.

27. A method as defined in Claim 26, wherein estimating a frequency shift is performed in the wireless communication device.

28. A method as defined in Claim 26, wherein estimating a frequency shift is performed in the wireless network infrastructure.

29. A wireless communication device comprising:  
a receiver configured to receive communication signals from a base station; and  
a controller configured to receive a velocity of the wireless communication device and to determine adjustments to be made to the receiver.

30. A wireless communication device as defined in Claim 29, further comprising estimating a frequency of a received communication signal based on the velocity.

31. A wireless communication device as defined in Claim 29, further comprising adjusting the receiver in accordance with the determined adjustments.

32. A wireless communication device as defined in Claim 29 wherein the determined adjustments to be made to the communication receiver comprises adjusting a frequency tracking loop.

33. A wireless communication device as defined in Claim 32, wherein adjusting the frequency tracking loop comprises estimating an initial frequency error for the tracking loop based on the velocity of the wireless communication device.

34. A wireless communication device as defined in claim 32, wherein adjusting the frequency tracking loop comprises estimating a frequency error for the tracking loop based on the velocity of the wireless communication device.

35. A wireless communication device as defined in Claim 29, wherein the determined adjustments to be made to the communication receiver comprises adjusting a time tracking loop.

36. A wireless communication device as defined in Claim 35, wherein adjusting the time tracking loop comprises estimating a loop filter coefficient for the tracking loop based on the velocity of the wireless communication device.

37. A wireless communication device as defined in Claim 35, wherein adjusting the time tracking loop comprises estimating a drift in the timing of a received signal based on the velocity of the wireless communication device.

38. A wireless network infrastructure comprising:  
a receiver configured to receive communication signals from at least one wireless communication device; and  
a controller configured to receive the wireless communication device velocity and to determine adjustments to be made to the receiver.

39. A wireless communication device as defined in Claim 38, further comprising estimating a frequency of a received communication signal based on the velocity.

40. A wireless communication device as defined in Claim 38, further comprising adjusting the receiver in accordance with the determined adjustments.

41. A wireless communication device as defined in Claim 38 wherein the determined adjustments to be made to the communication receiver comprises adjusting a frequency tracking loop.

42. A wireless communication device as defined in Claim 41, wherein adjusting the frequency tracking loop comprises estimating an initial frequency error for the tracking loop based on the velocity of the wireless communication device.

43. A wireless communication device as defined in claim 41, wherein adjusting the frequency tracking loop comprises estimating a frequency error for the tracking loop based on the velocity of the wireless communication device.

44. A wireless communication device as defined in Claim 38, wherein the determined adjustments to be made to the communication receiver comprises adjusting a time tracking loop.

45. A wireless communication device as defined in Claim 44, wherein adjusting the time tracking loop comprises estimating a loop filter coefficient for the tracking loop based on the velocity of the wireless communication device.

46. A wireless communication device as defined in Claim 44, wherein adjusting the time tracking loop comprises estimating a drift in the timing of a received signal based on the velocity of the wireless communication device.

47. A wireless network infrastructure as defined in Claim 38, wherein the network infrastructure further comprises a base station.